

Application No. 10/634,474  
Docket No. 1999U026.US-CON2  
Reply to Office Action Dated March 12, 2004

### Remarks

#### **Terminal Disclaimer**

A terminal disclaimer is filed herewith to U.S. 6,271,323 and U.S. 6,274,684. Withdrawal of the obviousness double patenting rejection is requested.

#### **Specification**

The specification was objected to as reciting U.S. Serial numbers. This has been corrected to include the reference to the issued U.S. Patent Number. There are two other U.S. Serial number listings at paragraphs [0071] and [0121] that refer to patent applications that have not issued, thus no change was made. Further, the Abstract is amended as requested by the Examiner, while remaining within the word limit required by the MPEP. Withdrawal of these objections is requested.

#### **Section 112, ¶ 1 Rejections**

Claims 1-22 were rejected under 35 U.S.C. § 112, ¶ 1 as being non-enabled. The Claim 1 has been amended to include "at least one activator," as suggested by the Examiner. In this regard, claim 6 is amended to conform with this new limitation. Withdrawal of this rejection is requested.

#### **Section 112, ¶ 2 Rejections**

Claims 1-22 were rejected under 35 U.S.C. § 112, ¶ 2 as indefinite. The Applicant responds to each by the amendments and remarks herein.

*Claim 1.* The Examiner requests insertion of the term "element" to modify "Group 15". The Applicant traverses this request, as the specification is clear in referring to the specific components in formulae (I) and (II) as "elements", but the compounds as a whole as "Group 15 containing compounds".

Application No. 10/634,474  
Docket No. 1999U026.US-CON2  
Reply to Office Action Dated March 12, 2004

*Claim 1.* The Examiner rejects the phrase “wherein raising or lowering the reaction temperature narrows or broadens the Mw/Mn of the polyolefin, respectively”. The Applicant traverses this rejection, as this language describes a feature of the process as claimed. The Examiner’s assertion that this effect is achievable “simply by dint of the fact that the polymerization reaction of each of the two compounds would have a different activation energy and different kinetic profiles” is traversed, in particular, as the Examiner has not shown that this would be achievable based on the prior art. There is no requirement that the Applicant show a scientific rationale for such a process limitation. The invention is described in part by that limitation, and the Applicant contends that it is an otherwise clear and unambiguous feature of the “process of polymerizing olefin(s) to produce a polyolefin” as claimed. To provide further clarity to the claim feature that is objected to, the claim further describes a temperature range for the polymerization process.

*Claim 1.* The Examiner rejects reference to the atoms in lines 20-21 of the Claim 1. Paragraph [0026] of the specification make it clear that these atoms, along with the first-listed “carbon atoms” are atoms that can form a part of the “heteroatom containing group”.

*Claim 1.* The term “directly” is added to the claim to conform to the Examiner’s suggested amendment of line 21 and 27 of Claim 1.

*Claim 1.* The term “or” is added after “halogen” as to conform to the Examiner’s suggested amendment of line 21 and 30 of Claim 1.

*Claim 1.* The Examiner points out that in the case when R1 and R2 are “interconnected”, the valency must “be more than divalent”. Given that this is apparent, the Applicant contends that one skilled in the art would readily understand this as well and that, in light of the structures being claimed, the valency, whether divalent or

Application No. 10/634,474  
Docket No. 1999U026.US-CON2  
Reply to Office Action Dated March 12, 2004

trivalent, etc., is inherent in such a case. Thus, this feature of the claim is clear and unambiguous.

*Claim 1.* The Examiner rejects use of the term "Y". The Applicant traverses this rejection. The Applicant wishes to point out that half of the alphabet is occupied by the Periodic Table of Elements, and there are thus few choices for naming such elements of a claim in general terms. One skilled in the art would understand this, and in fact, the letter "Y" is often used in a similar capacity in the same general art. For instance, see INORGANIC AND ORGANOMETALLIC REACTION MECHANISMS at pp 47, 146, 168 (J.D. Atwood, Brooks/Cole Publishing 1985) (use of "Y" to describe general class of ligands). Given that "Y" as used in the formulas is readily defined both in the claim and in the specification, it is believed that the use in the present application of "Y" is clear and unambiguous.

*Claim 2.* The term "or" is inserted after the first "heteroatom".

*Claim 3.* The term "R" is replaced with "R<sup>8</sup> to R<sup>12</sup>". The Applicant traverses the requested change in language, as use of "said" and "the" in this instance is stylistic and does not alter the clarity of the language.

*Claim 6.* Claim 6 is amended to read: "wherein the catalyst composition is introduced into the reactor as an alkane solution, suspension or emulsion".

*Claim 8.* The phrase "the group consisting of" is inserted as suggested by the Examiner.

*Claims 6-19.* The Examiner states that these claims are not enabled. The Applicant traverses this rejection. The Applicant contends that the specification would enable one skilled in the art to achieve these claimed ends. In particular, the claims in this regard are enabled as judged by "the amount of direction or guidance presented",

Application No. 10/634,474  
Docket No. 1999U026.US-CON2  
Reply to Office Action Dated March 12, 2004

"the presence or absence of working examples", "the state of the prior art", and "the relative skill of those in the art". *In re Wands*, 858 F.2d 731, 737 (Fed. Cir.1988). There is a large amount of direction given in the specification for achieving the end claimed results; there are working examples present, the state of the art of using various forms of polymerization and how to manipulate the parameters of those methods is broad; and finally, those skilled in the art would be able to, in light of the above, achieve the results in Claims 6-19.

*Claim 10.* Claim 10 is amended so to read "higher" and "lower", as defined inherently by paragraph [0129] of the specification as filed, and the data in the Tables.

*Claim 18.* The term "catalyst" is inserted as suggested for purposes of antecedent basis.

*Claim 20.* The term "ratio" is added for clarity as suggested by the Examiner.

Given the remarks above, and amendments to the claims, the Applicant requests the withdrawal of these rejections.

#### Section 102 Rejection

Claims 1-22 were rejected under 35 U.S.C. § 102(a) as anticipated by JP-10-330412 (*Sugimura*). The Applicant traverses this rejection, as there is no disclosure of the step of "raising or lowering the reaction temperature narrows or broadens the Mw/Mn of the polyolefin, respectively" as is claimed, or would have been inherent from that disclosure. At paragraph [0206] of the English language translation of *Sugimura* as provided to the Examiner, it states

[t]he molecular weight of the olefin polymer product can be controlled by the addition of hydrogen to the polymerization system or by varying the polymerization temperature. (*Sugimura* at ¶ [0206])

Application No. 10/634,474  
Docket No. 1999U026.US-CON2  
Reply to Office Action Dated March 12, 2004

However, this does not teach the Applicant's claim limitation, where, as claimed, raising the temperature narrows the Mw/Mn, and lowering the temperature broadens the Mw/Mn of the polyolefin. As the Examiner stated in his Section 112 rejection of the Applicant's claim language (Office Action March 12/04, p. 4), various properties of the catalyst components could influence such a response. The response and the process limitations that result from that response (raising or lowering the temperature within the claimed range), a part of the Applicant's claimed invention, could not have been predicted from a reading of *Sugimura*, nor is it inherent therefrom.

Withdrawal of this rejection is requested.

#### Section 103 Rejection

Claims 1-22 were rejected under 35 U.S.C. § 103(a) as unpatentable over *Sugimura* in view of each of *Schrock et al* (US 5,889,128), *McConville* (US 6,271,325), and *Liang et al.* (JACS 1999). This rejection is traversed.

Applicant refers to the discussion of *Sugimura* above. Given the lack of disclosure in *Sugimura* of Applicant's claim feature, the Applicant contends that the claims are allowable as written, as *Schrock*, *McConville* nor *Liang* add any direction to achieve the Applicant's claimed invention. Disclosure of certain group 15 element transition metal compounds does not suggest or motivate increasing or decreasing the polymerization temperature to achieve the stated result as claimed, or choosing a catalyst composition that possesses this feature.

Withdrawal of this rejection is requested.

Application No. 10/634,474  
Docket No. 1999U026.US-CON2  
Reply to Office Action Dated March 12, 2004

It is submitted that the case is in condition for allowance. The Applicant invites the Examiner to telephone the undersigned attorney if there are any other issues outstanding which have not been presented to the Examiner's satisfaction.

April 5, 2004  
Date

Respectfully submitted,

Kevin M. Faulkner  
Kevin M. Faulkner  
Attorney for Applicants  
Registration No. 45,427

**Univation Technologies, LLC**  
5555 San Felipe, Suite 1950  
Houston, Texas 77056-2723  
Phone: 713-892-3729  
Fax: 713-892-3687